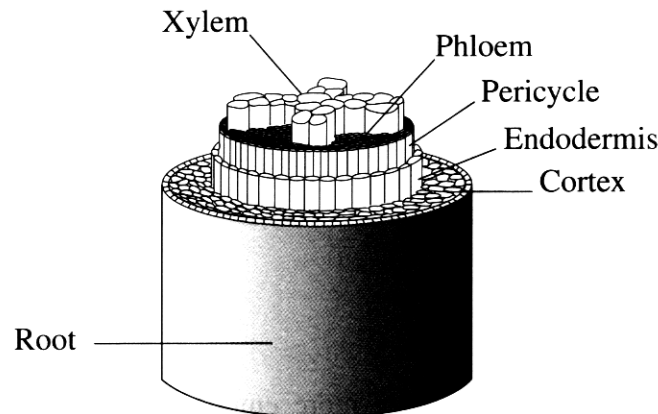


Marks

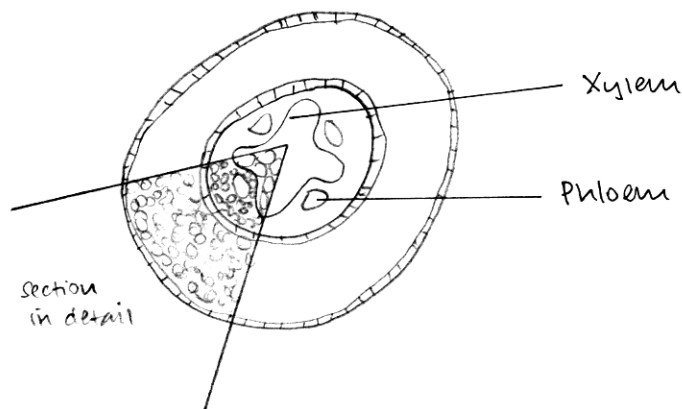
Question 17 (6 marks)

The diagram shows the arrangement of tissues in a young plant root.



- (a) From this diagram, draw a transverse section of the plant root. Clearly label the location of xylem and phloem tissue. 3

DIAGRAM OF A PLANT ROOT (TRANSVERSE SECTION)



- (b) Describe ONE current theory about the processes responsible for the movement of materials through phloem tissue in plants. 3

One current theory is that of the source-to-sink. There are 3 main stages: 1) Movement from the source into the phloem, usually against a concentration gradient, thus active transport is needed. 2) movement in the phloem due to pressures from the source and hydrostatic pressure. 3) unloading from the phloem to the sink again needing active transport, expending cellular energy. This movement of materials in the phloem is called translocation.